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ABSTRACT

This study assessed the role of inservice programs in bringing more developmentally appropriate practices to the early childhood classroom. Training was intended to accentuate the teachers' role in effecting educational change. Through classroom observations and teacher feedback, the researcher and participating teachers developed a 3-year inservice education plan. The plan included summer institutes on organizing learning environments for children, monthly on-site coaching and meetings with teachers, and workshops. The purpose of these activities was to help teachers actively develop new strategies for working with children and to provide a forum for addressing teacher concerns. Through these experiences, teachers were able to initiate several changes in their classrooms: (1) reorganization of classrooms to support active learning; (2) decrease in the teacher-child ratio; (3) elimination of the Metropolitan Achievement test in kindergarten; and (4) development of a new kindergarten curriculum, a new parent handbook, and a new report card. Teachers gained an appreciation of their ability to implement change in their classrooms, developed a new awareness of themselves as learning facilitators, and reported that their students were happier and more active learners. Results indicate that long-term inservice training, based on a process model of teacher change, can positively alter structural, administrative, and teacher aspects of the educational process. (JW)

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Effects of Inservice Training on Developmental Appropriateness in Early Childhood Programs

Cartoons of preschoolers trudging to school with briefcases and kindergarteners thinking "maybe I can bluff my way through" as they arrive for the first day of school reflect concerns about the negative outcomes of rote drill and practice of isolated academic skills for young children (Elkind, 1989; Kamii, 1985,. These outcomes include poor student performance and related high kindergarten retention rates (Shepard & Smith, 1988), increased student stress levels (Burts, Hart, Charlesworth & Kirk, 1990), and the undermining of children's perception of their own competence (Kamii, 1985).

In contrast, a more developmentally grounded, contextual approach to early childhood education suggests that children learn through the interaction of individual children's own thinking and their playful experiences with people and concrete objects (Bredekamp, 1987). Structural elements of early childhood programs reflecting these developmentally appropriate practices include a class size of twenty or fewer, an adult-child ratio of at least 1:10; and a material-rich environment organized in activity centers. In these settings, teachers create a child-focused curriculum emphasizing the on-going process of learning for understanding rather than standardized testing of discrete knowledge and skills (Shepard, 1991). Although researchers have emphasized the importance of implementing such activity-based programming (Bryant, Clifford & Peisner, 1991; Elkind, 1989; Kamii, 1985), few studies have explored the effectiveness of long-term inservice education programs in fostering appropriate changes in classroom structural elements, administrative policies, teaching practices, and teachers' related beliefs and attitudes (Goffin & Stegelin, 1992; Horsch, 1992; Jones, 1993).

Effective staff development programs focus on the teacher as central to creating change. In these programs, change is defined as a gradual and difficult process (Fullan, 1985; Guskey, 1986; Hall & Loucks, 1977). During this process, practicing teachers need access to new knowledge and support as they try out new practices and adapt them based upon their own experiences (Berman & McLaughlin, 1976; Fenstermacher, 1987).

One model of the teacher change process (Guskey, 1986) emphasizes that change takes place in a specific temporal sequence. It suggests that the initial step, staff development, leads to changes in teachers' classroom practice. This in turn leads to changes in student learning outcomes. Changes in teachers' beliefs and attitudes, rather than preceding changes in classroom practice, instead are the final step resulting from teachers' observations of effective changes in student outcomes.

A second model of teacher change (Joyce & Showers, 1982) suggests that teachers do not effectively transfer their learning of an innovation without coaching, the provision of continued, classroom-based support. This includes the provision of technical feedback and guidance in adapting the innovation to the students' needs and analyzing its effects on them.

Based upon these models of school change, this study investigates the process and effectiveness of a long-term inservice education program for practicing teachers in generating more developmentally appropriate practices in early childhood classrooms in an urban public school district. The study examines the program's impact in terms of changes in classroom structural elements, administrative policies, and teachers' practices, beliefs and attitudes.

School Climate

In 1988, the Connecticut State Board of Education published A Guide to Program Development for Kindergarten based upon the landmark work, Developmentally Appropriate Practice in Early Childhood Programs Serving Children Form Birth Through Age 8 (Bredekamp, 1987) and distributed the guide to every public elementary school kindergarten teacher and principal in the state. These documents emphasize the value of child centered, activity-based early childhood practices. They served as the impetus for a central office administrator already knowledgeable of the theoretical basis for developmentally appropriate practice to initiate an inservice education program to support change in the kindergarten and preschool programs in her district.

Her efforts were supported by a new school superintendent whose energies were focused on achieving educational equity for all students. The district, a small Connecticut city with a school population that included 32% minority, 24% non-English home language, and 14% economically disadvantaged students, became eligible for state priority school district funding. Through sustained efforts of these administrators, the use of this state funding included the development of recommendations and a long-term staff development program created and implemented by this researcher in collaboration with teachers and administrators to support practicing teachers' implementation of developmentally appropriate practice in the city's public school early childhood programs.

Collaborative Planning Process

The professional development planning process emphasized a multi-facetted, collaborative approach to working with school

personnel based upon the research on school change. The first year's effort was devoted to building a trusting relationship with school personnel through open, two-way communication about all planning efforts and an initial evaluation of current practices including an assessment of classroom practices, programmatic structures and administrative policies. Of the 23 early childhood teachers in the district, 21 opted to participate in the planning process; two sought and received transfers to other grade levels.

Exploration of the current status of the district's early childhood programs emphasized the influence of administrative policies and program structures in shaping and maintaining teaching practices. Although administrators may encourage teachers to implement developmentally appropriate programs, teachers are likely to feel constrained by existing curriculum and testing procedures. Likewise, teachers cannot be expected to create activity-centered programs without the structural supports needed to implement them: for example, a class size of 20 or fewer children; an adult-child ratio of at least 1:10; a rich array of materials; and active parent involvement (Bredekamp, 1987; Connecticut State Board of Education, 1988). In reviewing and analyzing the school district's documents and data, the researcher utilized these as well as related criteria developed by the National Association for the Education of Young Children and supported by the Connecticut State Board of Education.

The planning process was a collaborative effort of the teachers and researcher to study the current status of the district's early childhood programs as a basis for identifying and addressing needs. The process included on-site classroom visits during which the researcher observed each class program for an hour (preferably during the most active part of the daily schedule) and met with each teacher for a half hour to establish rapport and elicit more personal concerns about current teaching practices and

the planning process.

The teachers also completed a self-study process including two instruments: a questionnaire about classroom scheduling, structures, and materials developed by the researcher and the "instructional practices" and "classroom environment" items from a form developed for the Maine Department of Educational and Cultural Services (Argon'izza et al, undated). This process enabled teachers to identify their present classroom practices and simultaneously review the elements of child-centered, activity-based programs. Involving teachers directly in this effort via self-study and site visits emphasized their active role in the change process.

The self-study forms completed by the teachers as well as the results of on-site classroom observations and individual consultations with the teachers were analyzed and related school documents (philosophy statements, early childhood curriculum, parent outreach materials, report cards, and assessment procedures) were reviewed. Based upon an examination of the data from the evaluation process, the researcher developed a composite report which was shared with all parties both in writing as well as at a meeting with the entire group and one exclusively for teachers to maintain trust and the mutuality of the planning process.

The report described the current status of program elements related to classroom environment, curriculum, documentation and administrative policy. Descriptions of the classroom environments by the teachers, corroborated by the researcher's observations, suggested that most classrooms were not well-equipped. In addition, materials and supplies were very unevenly distributed; some rooms were adequately stocked; many were minimally endowed.

The kindergarten curriculum document and report card focused on teaching discrete skills outside of a meaningful context rather than focusing on child-centered, activity-based learning. This

emphasis was reflected in the teachers' self-reports of teaching strategies and the classroom observations. Children in half day classes spent an average of 54 minutes in whole group instruction and less than 30 minutes in hands-on activities. In classes with paraprofessionals, their time was devoted primarily to record keeping and preparing activities rather than working with children.

The report also identified some inequitable administrative policies. Assignment to full-day kindergarten classes was linked to testing; 117 children (17%) judged most "ready" using a non-validated screening instrument were assigned to full-day classes. The remaining 83% (581 children) were assigned to half-day classes. This policy resulted in substantial group differences. ESL children and children having their first school experience were under-represented in the full-day class groups (2% and 11% respectively). ESL children and children having their first school experience were over-represented in the part-day classes (16% and 39% respectively). Adult-child ratios of full and half-day classes also differed. The 5 full-day kindergarten classes included 180 minutes of paraprofessional support daily. The 25 half-day classes included a mean of 71 minutes of paraprofessional time daily (ranging from 0-150 minutes); six half-day classes had no para time allotted to them. In addition, parent involvement was a missing link in most of these early childhood classes.

Based upon the composite data, the report concluded with a series of recommendations including the implementation of an intensive on-site inservice education program starting with a small group of teacher volunteers to be repeated over the following year for other interested teachers. It also suggested the provision of a series of workshops (one series for teachers, one for school principals, and one for parents) to enable them to become more informed about developmentally appropriate practice. In addition,

the report suggested that teachers, with the researcher's support, create a child observation checklist to replace the present skill sheet used to document children's progress.

This evaluation process and composite report led to the researcher's drafting of a three year inservice education plan which, by agreement, was reviewed with administrators and then distributed and discussed at an open meeting with all the staff who would be involved: the kindergarten and preschool teachers, the principals of the eight elementary schools, and the specialists involved in early childhood education programs.

Project Implementation

Based upon the report and inservice education plan, the following recommendations were implemented. School-based teams of teachers and paraprofessionals participated in week-long summer institutes on organizing environments for children (offered for two successive summers). The institutes included a tour of the classrooms of the participating school teams to increase members' awareness of the environmental potential of their classrooms and to brainstorm ideas for reorganization. Simultaneously the teams identified substantial discrepancies in the available equipment in each classroom. The teams spent time over several days during the institute rearranging their classroom environment with the researcher facilitating the process. One primary goal of the researcher was to model the role of facilitator for the teachers so that they would begin to formulate a similar role for themselves in relation to the children in their classrooms.

During the following school year, the researcher continued modeling this role of facilitator by providing monthly on-site coaching and working individually with each teacher or team that

participated in the summer institute. The teachers and researcher also took part in monthly collegial meetings to share new program ideas and examples of children's work and to brainstorm strategies to address teachers' concerns. Coaching sessions continued in a modified arrangement three-four times annually for one-two years following the first year of monthly sessions (based upon teacher's request) to support teachers' continued efforts towards developmentally appropriate practices. In addition, funding for purchasing equipment and materials enabled teachers to create well-supplied learning centers in each classroom. These funds were expended to promote equity in the equipping of each classroom.

To strengthen teachers' efforts, several workshops were presented for them, a few for principals on supervising and supporting the efforts of teachers working toward implementing developmentally appropriate practices, and a workshop on developmentally appropriate practices for parents at some elementary schools (at the principal's request). The researcher also met with administrators on a regular basis to encourage changes in policies and procedures based upon recommendations developed at the teachers' monthly meetings.

Results

This study included collecting data from teacher self-study forms and interviews as well as observations of classrooms prior to, during, and after implementing the four year inservice education program. The on-going examination of programmatic changes included study of several structural program elements: organization of classroom environments, schedule of activities, adult:child ratios, use of standardized testing, class grouping policies, formalized curriculum materials, and reporting devises. In addition, teachers

completed questionnaires annually over a three year period to assess changes in their perceptions of teaching practices as well as their attitudes and beliefs about teaching and the role of teachers and children in the classroom. Individual, open-ended interviews with teachers were also completed at the conclusion of the inservice education program to elicit a more intensive, qualitative picture of the teachers' perspectives of their practices, attitudes and beliefs.

Structural Changes

Over the four year inservice education program, several changes were made in the programs' structural elements. All classroom environments were reorganized into activity centers and equipped with sufficient materials to support this effort. Class schedules were reorganized so that time in small group, activity-based learning within each two and a half hour daily class session was increased (from a mean of 28 minutes to a mean of 49 minutes) and whole group instruction was reduced (from a mean of 54 minutes to a mean of 35 minutes per half-day session). Paraprofessionals' time was increased and equalized to create adult-child ratios of at least 1:12 in each classroom during the time of their participation in the classrooms. In half day sessions paraprofessional time increased from a mean of 70 minutes (range 0-150) to a mean of 124 minutes (range 90-180) per half-day session.

Administrative Policy Changes

Changes in administrative policies included the elimination of the Metropolitan Achievement Test in kindergarten. Administrators' analysis of this policy, based upon teachers' request for the test's elimination, suggested that the limited use of the test results (comparison of group norms) did not warrant its continuation.

Full day kindergarten classes, which had been grouped homogeneously using questionable testing procedures, were eliminated. As a result, all children were assigned to heterogeneous-grouped kindergarten classes. The reduction in teacher salary costs related to the elimination of the full-day program helped to fund the increase in paraprofessional time for all classes described above.

With administrative encouragement, the researcher facilitated teachers' development of several new program documents which were adopted by the district. For example, teachers created a new kindergarten curriculum document. The prior document focused on a skill-driven outline of "learner objectives," "teaching strategies," "instructional materials," "evaluation targets" and "reinforcement activities." The new curriculum, organized in loose leaf format, is a working document with sections describing the role of children and adults in developmentally appropriate programs, class schedule options, and strategies for organizing learning centers. In addition it includes potential themes for implementing an integrated curriculum and teaching resources (suggested materials and supplies, sample floor plans, observation and recording sheets to support teachers' on-going assessment of children, and lists of guides and books for curriculum planning). A new kindergarten report card and parent handbook were also drafted to reflect the more developmentally appropriate practices being espoused in the curriculum and implemented in the classrooms.

Changes in Teachers' Perceptions

The structural and policy changes described above were implemented in all the early childhood classes. Teachers also viewed themselves as making substantial changes in many elements of their programs. Responses on the self-report form (Argondizza et

al, undated) in the first and third years of the program indicated dramatic shifts in the percent of teachers who perceived their instructional strategies and classroom environments to be more developmentally appropriate. For example, by the third year, three times as many teachers indicated that they were using individualized or small group instruction and were arranging the room and traffic patterns to reflect the diverse developmental needs of children (see Table 1). In the fourth year, in response to a rating scale measuring teachers' perceptions of change, teachers indicated that they viewed themselves as making "significant changes" not only in their classroom environment but also in the roles played by the teacher, the paraprofessional and the students (see Table 2).

Insert Tables 1 and 2 here

Analysis of open-ended questions and interview data collected during the fourth year also reflected powerful shifts in teachers' belief systems. For example, in response to open-ended questions, 63% of the teachers described their new role as "facilitators" of children's learning and 44% wrote about the importance of their role as "observers" of children's development. The majority of teachers also reported that their students were happier and more actively involved in the learning process. One teacher wrote: "I've always read that children learn best when they actually have an active part in the activity. Seeing children engaged in active play on a daily basis has solidified this belief for me." Another wrote:

> When the . . . kindergarten teachers were first approached about changing toward developmentally appropriate teaching, we were very skeptical. Personally I felt that for the majority of students, the academic program worked successfully. The teacher was in control of the classroom at

all times, it was orderly, and there was a high degree of accountability of skills.

During the three years that the developmental program was implemented, I discovered changes in attitude, environment, and learning that I did not anticipate. The overall climate now is more relaxed. . . Children at all age spans and academic backgrounds are meeting with successes. Less time is needed to discipline as movement and talking are an integral part of activity centers and cooperative learning.

Perhaps the most difficult aspect of the transition has been demonstrating the value of the developmental program to upper grade teachers and administrators. Their observations are brief, if they exist at all, and they look for order, control, and quiet to indicate learning. Despite our successes, we still have challenges ahead.

This teacher seems extremely committed to the new program and simultaneously greatly concerned about the lack of broad support to sustain it. Other teachers also described their fear that more academic type instruction geared to teaching to a standardized test would be reinstituted in the next few years.

Conclusions

The results of this study suggest that long-term, collaborative inservice education programs based upon process models of teacher change can promote the implementation of changes in structural classroom elements and administrative practices to create more developmental appropriateness in early childhood education programs. This investigation also supports previous research that teachers' attitudinal changes are more gradual, resulting from their observation of the results of the changes they make in classroom

organization and teaching practices on children's behavior and learning.

The constraints of a time-limited inservice program facilitated by the researcher (an external consultant) left teachers concerned about the potential for administrative policy reversals that might jeopardize their work. Recent studies suggest the value of continuous collaborations between public schools and teacher education institutions (The Holmes Group, 1986; Carnegie Report, 1986). On-going research related to these efforts is needed to investigate whether more permanent collaborations between these groups have more powerful long-term effects in supporting school change.

TABLE 1: TEACHERS' SELF-REPORT

	PERCENT	
	Year 1	Year 2
CHANGES IN INSTRUCTIONAL STRATEGIES		
Children have equal input in planning (i.e. through webbing)	.00	.44
Children select areas of interest and recognize skills they need to acquire	.00	.31
Skills based, time specified for each content area	.41	.00
Interest-driven study with skills addressed as needed	.00	.31
Begin with teaching parts (discrete skills) and build toward whole (concept)	.53	.06
Begin with whole concept; break into parts as skills acquisition is needed	.41	.94
Individualized or small group instruction. Use child's own language to build skills	.29	.88
Interaction and cooperative problem-solving encouraged	.24	.94
Reading instruction is based on children's literature and children's own writing	.47	1.00
Competition with oneself is focus so that rewards become intrinsic	.29	.69
CHANGES IN THE CLASSROOM ENVIRONMENT		
Desks are clustered, learning centers are located around the perimeter of room	.59	.00
Room is arranged in learning centers	.29	1.00
Room remains much the same throughout the year; may be changed for variety	.47	.13
Room arrangement and traffic patterns reflect the diverse developmental needs of children	.18	.69
Concrete materials available; distribution controlled by teacher	.35	.06
Children use concrete materials to assist in problem-solving and to create problems for solving	.18	.63
Room is prepared with commercial or teacher-made displays for children's arrival	.29	.00
Children help plan spaces and displays of their work	.06	.31
Small group and individual instruction/conferencing as well as whole group instruction	.18	.81

TABLE 2: QUESTIONNAIRE ABOUT CHANGE RESPONSES - YEAR FOUR

Following are the teachers' ratings of the degree of change in areas of their program. Teachers were asked: "Based upon your own efforts and your participation in on-going in-service training in developmentally appropriate practices, to what degree have you made/experienced changes in the following areas on a scale of:

1 no changes 2 some changes 3 significant changes

		Level of Change		
		1	2	3
1.	The way your classroom is organized	.06	.06	.88
2.	The curriculum you are implementing	.06	.19	.76
3.	The equipment and materials the children use on a day to day basis	.00	.19	.81
4.	Your daily class schedule	.06	.13	.79
5.	The way YOU spend your time (during class time)	.00	.20	.79
6.	The way you teach (your role as teacher)	.00	.19	.82
7.	The way your assistant spends her time (during class time)	.00	.31	.69
8.	The role of your assistant	.00	.29	.72
9.	The way your students are organized (large group, small group; grouping by ability vs. interest; homogeneous vs. heterogeneous)	.06	.25	.69
10.	The way your students learn (the role of the student in the classroom)	.00	.06	.93
11.	The procedures you use to manage student behavior	41	.41	.18
12.	Students' interactions with you	.35	.24	.41
13.	Students' interactions with other students	.06	.19	.75
14.	Your expectations and outcomes for your students	.12	.40	.47
15.	The culture/climate of your classroom (student attitudes)	.06	.40	.54
16.	The response of your students' families to your class program	.12	.35	.53
17.	The response of other teachers in your school to your program	.13	.50	.38
18.	The school budget (the way money is spent including funding for personnel)	.19	.25	.57

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